AQUATIC RESOURCE ALTERATION PERMITS
SECTION 401 WATER QUALITY CERTIFICATION
GUIDE FOR PERMIT APPLICANTS

Purpose:

The Tennessee Department of Environment and Conservation, Division of Water Pollution Control, prepared this guide to provide applicants with information that may be helpful in completing Tennessee's Aquatic Resource Alteration Permit (ARAP) application. An ARAP application form (CN-1091) can also be used to apply for §401 Water Quality Certifications.

Aquatic alteration activities fall into two categories: those that can be authorized under one of the 15 existing general permits or those that require an application for an individual ARAP. Typically, an individual ARAP application is required when the proposed activity is outside of the scope of general permit coverage. The existing general permits, with their basic limitations and exclusions for coverage, are available on the Internet at http://www.state.tn.us/environment/permits/arapgps.shtml. If the proposed activities impact multiple stream or wetland areas in a single project, then an individual permit application may be required.

Note: Considerable processing delays occur when the original application is submitted to a local EFO for an activity that is outside the scope of the general ARAPs. If you are unsure about what type of permit your project may require, contact your local EFO (Environmental Field Office) or call toll-free 1-888-TDEC (8332).

Application Processing:

General permit applications: The division's goal is to take an action on general permit coverage applications within 30 days of receipt of a **complete** permit application. An activity may be granted coverage under a general permit, or the activity may be denied coverage. If coverage under a general permit is denied, an applicant can request the application be processed as an individual permit.

Individual permit applications: The division's goal is to take action on individual permit applications within 90 - 180 days of receipt of a **complete** application, including the appropriate application fee. Processing time can vary depending upon such things as the complexity of the activity or impact, the level of public interest (including public hearings), the quality or value of the waters to be affected, etc. Please keep in mind that not all activities are entitled to a permit.

Public Notice:

Once the division receives a complete individual ARAP application and performs a technical review to determine if additional information is needed, it will publish a public notice of the application for a 30-day comment period. The applicant will be responsible for publishing a division-approved notice in a newspaper of general circulation and posting a division-approved notice sign near the project site. This posting does not signal the division's intent to issue or deny a permit; it is only a notice that the application is being considered for permitting. If, during this comment period, the division receives a request for a public hearing, the hearing will be scheduled and a

public notice of the hearing will be published giving at least 30 days prior notice of the hearing.

A public notice for an application can only be published after the division receives a complete application package and conducts a review of the complete application.

Definitions of words as used on the application form or commonly used in the ARAP permit process:

Alternative site: An area that may or may not be presently owned by the applicant and that could reasonably be obtained, utilized, expanded, or managed in order to fulfill the basic purpose of the proposed activity.

Antidegradation Statement: Department rule 1200-4-3-.06 requires that any lowering of water quality is necessary to accommodate important economic or social development in the area in which the waters are located. See the rule for more on this.

Applicant: Any and all persons, including any firm, agency, or entity defined as a person under the Water Quality Control Act, seeking approval to alter waters of the state.

Aquatic Resource Alteration Permit: A permit pursuant to §69-3-108 of *The Tennessee Water Quality Control Act of 1977*, which authorizes the alteration of properties of waters of the state which result from activities other than discharges of wastewater through a pipe, ditch or other conveyance. Such a permit shall impose conditions, including standards and terms of periodic review, as are necessary to accomplish the purposes of the *Act*.

Available or Unavailable Conditions: Categories of surface water status under the Antidegradation Statement. Available conditions exist where water quality is better than the applicable criterion for a specific parameter. Unavailable conditions exist where water quality is at, or fails to meet, the criterion for one or more parameters.

Avoidance: Modifying or not taking a proposed action so there is no adverse impact to the aquatic environment.

Best Management Practices (BMP): A schedule of activities, prohibition of practices, maintenance procedures or other management practices to prevent or reduce the pollution of waters of the state BMPs include methods, measures, practices, and design and performance standards.

Certification: An Aquatic Resource Alteration Permit under *The Tennessee Water Quality Control Act of 1977*, as required by Section 401 of the Federal Clean Water Act. Under Section 401, an applicant for a federal permit or license that results in a discharge into waters of the United States must provide the federal permitting agency a certification that state water quality standards will not be violated.

Compensatory mitigation: The restoration, establishment, enhancement, or protection of wetlands or other aquatic resources for the purpose of compensating

for unavoidable adverse impacts. Unavoidable impacts are those that remain after all appropriate and practicable avoidance and minimization have been achieved.

Degradation: The alteration of the properties of waters by the addition of pollutants or the removal of habitat.

Exceptional Tennessee Waters: A category of surface water status under the Antidegradation Statement, which carries a higher level of protection. Surface waters previously identified for this category are available on-line at http://tennessee.gov/environment/wpc/publications/hqwlist.mht. Other waters may also be Exceptional Tennessee Waters as identified in the rule.

Family farm: One or more tracts of land, used for agricultural purposes, which are held in private ownership by one or more people related by birth or marriage.

Intake/Outfall structure: Any structure or conveyance used to discharge into or remove water from waters of the state.

Jurisdictional wetland: Any area that has the appropriate hydrology, soils and plants to meet wetland criteria as defined in the 1987 Army Corps of Engineers' Wetlands Delineation Manual, and which falls within the statutory definition of waters of the state.

Maintenance activities: A variety of activities that are proposed to maintain a currently serviceable structure, such as a dam, intake/outfall, utility, culvert, or bridge. Currently serviceable means usable as is or with some maintenance, but not so degraded as to essentially require reconstruction.

Minimal water impact alternative(s): Less environmentally damaging or scaled-down version(s) of the project that would result in less impact to surface water quality and still meet project goals.

Minimization: Lessening impacts to the aquatic environment by reducing the degree or magnitude of the proposed action and its implementation.

Newspaper of general circulation: A publication bearing a title or name, regularly issued at least as frequently as once a week for a definite price, having a third-class mailing privilege, being not less than 4 pages, published continuously during the immediately preceding one-year period, which is published for the dissemination of news of general interest to the community which it serves, and is circulated generally in the municipality in which it is published and in which notice is to be given.

NAD83: North American Datum of 1983. It is the official data type used for the primary geodetic network in North America.

Non-water impact alternative(s): Alternative(s) that would result in no impact to surface water quality. Note: If the project is water-dependent (required to be in or adjacent to water), this alternative may be considered to be a no-build alternative. If it is not a water dependent project, an alternative design that avoids degradation, other than a no-build alternative, must be proposed.

Outstanding National Resource Waters (ONRW): A category of surface water status under the Antidegradation Policy with the highest level of protection. The Water Quality Control Board designates these waters through rulemaking; see rule 1200-4-3-.06 (5).

Personal residence: Where one or more persons reside.

Pollution: Alteration of the physical, chemical, biological, bacteriological, or radiological properties of the waters of this state, including, but not limited to, changes in temperature, taste, color, turbidity, or odor of the waters that will:

1. Result or will likely result in harm, potential harm or detriment to the public health, safety, or welfare;
2. Result or will likely result in harm, potential harm or detriment to the health of animals, birds, fish, or aquatic life;
3. Render or will likely render the waters substantially less useful for domestic, municipal, industrial, agricultural, recreational, or other reasonable uses; or
4. Leave or likely leave the waters in such condition as to violate any standards of water quality established by the board.

Practicable alternative: An alternative that is available and capable of being done after taking into consideration cost, existing technology, and logistics in light of overall project purposes.

Preferred design or preferred site: The project you are submitting for approval and that is justified by an alternatives analyses.

Stream: All waters of the state on the surface of the ground except wet weather conveyances. Streams include, but are not limited to, creeks, rivers, canals, and tributaries.

Substrate: The material composing the bottom of a stream channel.

Water-dependent: An activity that requires location in or adjacent to surface waters or wetlands in order to fulfill its basic purpose.

Water quality: Water quality refers to the physical, chemical and biological integrity of any waters of the state.

Waters: Any and all water, public or private, on or beneath the surface of the ground, that are contained within, flow through, or border upon Tennessee or any portion thereof, except those bodies of water confined to and retained within the limits of private property in single ownership that do not combine or effect a junction with natural surface or underground waters. This concept is also referred to as “waters of the state”.

Wetlands: Areas that are inundated or saturated by surface or ground water at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions. Wetlands generally include swamps, marshes, bogs, and similar areas.

Wet weather conveyance: Man-made or natural watercourses, including natural watercourses that have been modified by channelization, that flow only in direct response to precipitation runoff in their immediate locality, and whose channels are above the groundwater table, and which do not support fish or aquatic life, and are not suitable for drinking water supplies.

Format:

These guidelines are to be used in conjunction with form CN-1091 Rev. 12/07. The information in this guide is listed in the same order as the questions on the application. Following each section number is a list of topics that the division requires to be addressed, and a brief explanation of the kind of information that section should include. Please respond to each question in the order and format presented on the application form. If a particular point does not apply to your project, state 'not applicable' and include an explanation.

It is the applicant's responsibility to support claims made in the application with justification, data, assessments, case history, literature citations or other evidence.

Information needed on application:

(Note: Sections 1 – 7 and 13 should be completed on the application form. Sections 8 – 12 should be completed on separate sheets).

Section 1: Applicant information

- Applicant's name: enter the name of the responsible party or parties. If the responsible party is an agency, company, or other organization, also provide the name of the responsible officer and title.
- Applicant's complete mailing address and phone number are required.
- Provide the phone number where the applicant can be reached during normal business hours.
- E-mail addresses are useful in allowing prompt transfer of information and can help speed up the application process.
- The title or position within a company or corporation is needed to determine whether the person who signs the application is duly authorized.

Section 2: Alternate contact within your organization

If there is a project manager or person more intimately familiar with the project within the applicant's organization, provide appropriate contact information as listed in Section 1.

Section 3: Consultant information

If a consultant is to actively participate in the permitting process, the information requested of the applicant must be provided for the consultant. The consultant may be the primary contact or act as agent for the applicant throughout the entire process. The consultant's role will be strictly to provide technical and design information. Information requests and written communication will be directed at the applicant's primary contact or consultant with the applicant copied on any correspondence.

Section 4: Fee

- The division will not process an application without having received the appropriate fee. No refunds of permit application fees will be made for any reason, other than as required by T.C.A. §68–203–101 et seq.
- There is no fee for ARAP general permit coverage applications.
- Chapter 1200–4–11–.02 of the department's rules establishes the following schedule of fees for individual §401 Certification or ARAP permits:
    - Projects with alterations equal to or greater than 10 acres of wetland or equal to or greater than 1,000 linear feet of stream - $2,500
    - Projects with alterations to less than 10 acres of wetlands or less than 1,000 linear feet of stream - $1,000
    - Watershed District Projects $ 750
    - Personal Residence or Family Farm $ 50
    - Projects that replace, restore or repair public infrastructure or remediate damages from flooding or storm events and qualify for federal disaster assistance are exempt from fees for this permit.

Section 5: Project Details

- Provide the name of the project or site, *e.g.*, River View Acres, River Road Sewer Line, Tennessee Community Airport, Kyzar family farm, etc.
- Provide the address or closest point of reference.
- Provide the county (or counties) in which the project is located.
- Provide the name of the stream as shown on a United States Geologic Survey (USGS) topographic quad map. If the stream is unnamed, indicate that the stream is unnamed and give the name of the named stream into which it flows (*e.g.*, unnamed tributary to Whites Creek). Do not put just "stream" or "channel."
- Provide the precise coordinates of the proposed alteration(s) as latitude and longitude in decimal degrees (*e.g.*, 36.1234 ºN, -86.1234 ºW). NAD83 datum is preferred. If another datum source is used, it must be indicated.
- Check the appropriate check box (es) under the type of proposed alteration that most closely describes the change(s) to waters for which you are seeking a permit. If no box describes your alteration(s), then check "other" and write in your alteration.
- Give a brief description of the project, *e.g.*, "proposed installation of a 75-foot span bridge," "maintenance dredging around loading dock," or "installation of five road crossings and four utility line crossings associated with residential construction."

- List all approvals needed to complete your proposed project and their status, such as: Army Corps of Engineers Section 404 permits or Section 10 navigation permit, storm water permits, National Pollutant Discharge Elimination System permits (NPDES), Safe Dam permits, mining permits, Federal Emergency Management Authority (FEMA), or others. In the description of the status of these approvals, provide the permit or application number for all applicable permits. Many, if not most, of the alterations that require an ARAP permit will also require coverage under the Tennessee General NPDES Permit for Discharges of Storm Water Associated with Construction Activities (TNCGP). Contact your local TDEC field office or visit http://www.state.tn.us/environment/permits/conststrm.shtml for more information on that permitting process. You do not need to have the other permits or approvals prior to applying for an ARAP.

Section 6: Directions to project site

- Provide directions to the project site starting from the nearest major highway or landmark. Include highway and street numbers, as well as names. Also provide distances from other known locations or any other information that would assist in locating the site.

Section 7: Project schedule

- Give the date or time frame in which you propose to begin the activity, if permitted.
- Give the date or time frame in which you expect to complete the activity for which a permit is required.
- If any portion of the project was started, check "Yes" and provide a description of the extent of the work and the dates the work started and stopped. If any portion of the activity was authorized under a previous permit, please provide the permit tracking number.

Section 8: Project description

8.1 A narrative description of the scope of the project

- Give a written explanation of what you are proposing to do.
- Provide a description(s) of the alteration(s) to the aquatic resources for which the application is being submitted.

8.2 USGS topographical map indicating the exact location of the project (can be a photocopy)

- Depict the location of the project on a topographic map. Topographic maps are available from local USDA offices, from the department, and libraries. The information is also available on the Internet for no charge at http://www.topozone.com. You may print from that website the topographic map showing the central location of the proposed work. This printout will show the coordinates and the map name.

8.3 Photographs of site with location description (photo locations should be noted on a site map)

- Photographs are essential to describe the work and to gage the impact of the proposed activities on the aquatic resource(s). Digital photographs are acceptable. Submit numbered photographs of all surface water areas (including wetlands) and associated vegetative buffers to be impacted, including photographs of directly adjacent land. Include reference map showing photo locations and directional arrows. Include the dates the photos were taken.

8.4 A narrative description of existing stream and/or wetland characteristics…

- Streams: Provide a description of each stream on the site, including channel length, width, and depth; water depth; and substrate. Describe type, age and width of vegetation buffer adjacent to the watercourse(s). Provide the linear footage of each stream potentially impacted by the project. Describe present and proposed adjacent land uses, to the extent known. The site plans (required in section 12.1) must have a figure showing location(s) of all streams.
- Wetlands: Provide the acreage of each wetland potentially impacted by the project. Provide descriptions of the wetlands including the type of wetland (forested, emergent, etc.), the source of hydrology, and the dominant vegetation. Describe present and proposed adjacent land uses, to the extent known. The site plans (required in section 12.1) must have a figure showing location(s) of all wetlands.
- Lakes/Ponds: Provide the name of the stream that flows in or out of the water body, if any. Provide the size (in acres) and describe the adjacent vegetation. Provide the depth of the waterbody in the project area. Describe present and proposed adjacent land uses, to the extent known. The site plans (required in section 12.1) must have a figure showing the location of all water features.

8.5 A narrative description of the proposed stream and/or wetland characteristics

- Streams: Provide information on the proposed alterations to the stream channel's length, width, depth, substrate, in-stream habitat, or riparian vegetation. Each aspect of the stream that will be altered must be described in this section. Indicate if any of these changes are temporary in nature.
- Wetlands: Provide information on the proposed changes to the existing wetland's size, type of wetland, source of hydrology, amount of water, or vegetation. Indicate if any of these changes are temporary in nature. Descriptions of wetland mitigation should be discussed in section 11.

- Lakes and Ponds: Provide information on changes to the water body's depth, length, volume, or habitat.

8.6 In the case of wetlands, include a wetland delineation with delineation forms and site map denoting location of data points

- The delineation should have the acreage of each individual wetland, as well as the total wetland acreage on site.
- The delineation forms should be from and filled out according to the 1987 edition of the Corps of Engineers Wetlands Delineation Manual. Information on this manual is available on the Internet at http://el.erdc.usace.army.mil/elpubs/pdf/wlman87.pdf.

Section 9: Purpose and Justification

- This is why you are proposing the project and the alterations.
- The response to this section is essential for the evaluation of alternatives and avoidance and minimization of impacts, as required by rules 1200-4-7 and 1200-4-3-.06 and the requirements of the public notice, as set forth in rule 1200-4-7.

Note: Simply leveling a site, or preparing a site for an unspecified project for speculative land development is generally not considered adequate justification for impacts to waters of the state.

Section 10: Alternatives

All permit applications require a description of the practicable or reasonable alternatives, including what was done to avoid or minimize impacts to the aquatic resources. This is required by both rules 1200-4-7 and 1200-4-3-.06.

It is the applicant's responsibility to support claims made in this section with

- For general permit coverage applications, only questions **C 1** and **C 2a** below must be answered.
- For all other applications, all of the questions below must be answered. The following format is recommended:

Part A: Overall Project

Provide the following information for the project, as proposed in this application. This is for your preferred design and selected project site.

1. Describe and provide an estimate of the important social and economic benefits to be realized through this project. Including, but not limited to, any of the following issues that may apply.
    - Include the number of jobs to be created (directly and indirectly) by the project.
    - Include state and local tax revenues to be generated.
    - Give a brief description of the local economy (i.e., median household income, poverty rates, population growth, unemployment, etc.).
    - Discuss the potential direct and indirect increases in property values due to the proposed project.

- Discuss the positive impacts on the recreational and commercial opportunities of the water resource, including tourism.
- Discuss the role your project in providing or contributing to a necessary social service.
- Discuss businesses that will be positively impacted by the proposed project.
- Give a brief discussion regarding the positive aesthetics of the proposed project.
- Discuss any benefits to human health that will result directly from this project.

2. Describe and provide an estimate of the important social and economic benefits that may be lost as a result of this project including, but not limited to, any of the following issues that may apply.
    - Include the number of jobs to be lost (directly and indirectly) due to the project.
    - Include state and local tax revenues to be lost.
    - Discuss the proposed direct and indirect lowering of property values due to the proposed project.
    - Discuss the negative impacts on the recreational and commercial opportunities of the water resource, including tourism.
    - Discuss businesses that will be negatively impacted by the proposed project.
    - Give a brief discussion regarding the negative aesthetics of the proposed project.
    - Discuss any negative impact to human health that may result directly from this project.

Part B: Alternative Sites

Provide a list of alternative sites that were considered for this project. Provide the time frame of the site search.

For each site, provide a brief description of the three items listed below. Discussion of the preferred site should be first.

1. The feasibility of locating the project on the site.
2. The environmental consequences to locating on the site.
3. Any increase or decrease in the social and economic benefits of the project by locating at the site.

Note, if the project depends on being located at a specific site, then supporting documentation of the date of site ownership must be provided for this section.

Part C: Avoidance, Minimization and Alternative Designs

1. Describe your process of avoidance and minimization that resulted in your preferred design and reduced impacts to waters.
2. Provide a list of alternative plans, layouts, water alterations or construction techniques. There must be at minimum a discussion of the preferred design, a minimal water impact alternative and a non-degradation water impact alternative.

For each alternative, provide a brief description of the three items listed below. Bullets with additional explanatory statements or questions follow. Label the preferred design.

a. Describe the fill or other alterations directly affecting the waters.

b. Describe the environmental consequences of the alternative. Include the anticipated impact of the proposed lowering of water quality on aquatic life and wildlife, including any threatened or endangered species, important commercial or recreational sport fish species, other individual species, and the overall aquatic community structure and function.

- How will the alteration(s) adversely impact rare, threatened and endangered plants and animals? (Include any written comments from the Tennessee Wildlife Resources Agency, the U.S. Fish and Wildlife Service or TDEC's Division of Natural Areas).
- How will each alteration adversely impact aquatic habitat and physical characteristics of the water body and adjacent areas? For example: how will this alteration(s) affect stream habitat, such as woody debris, root mass and other cover, and pools and riffles? Will the alteration(s) change the stream's substrate? Will the alteration(s) result in a change in water temperature?
- Will the alteration(s) result in a barrier to the movement of fish and aquatic life?
- How will the alteration(s) adversely impact flow of surface water if applicable?
- Will the alteration(s) affect riparian vegetation?
- How will the stream's sediment moving capabilities be affected?
- How will the wetland's pollutant filtering capability be altered?

c. Include a discussion of the cost effectiveness and the availability and technical feasibility of the alternative. In addition, the reliability of the alternative should be addressed.

Cost effectiveness

- Itemize the anticipated costs to construct each alternative (including compensatory mitigation and monitoring costs, if applicable).
- Itemize the anticipated profits or losses for each alternative.

Availability/ Feasibility

- Is technology available to complete the alternative project as proposed, or is it theoretical or unproven?

Reliability / operation and maintenance difficulty

- What is the anticipated life of the alteration and will it need repairing?
- Are the aspects of the project and the alternatives that are designed to address water quality impacts associated with the project reliable and dependable?

Section 11: Mitigation

11.1 A detailed discussion of the proposed mitigation, if required

- Compensatory mitigation is not required for aquatic resource alterations that qualify for coverage under an existing general permit. However, multiple impacts in a single project may combine to elevate your application to individual permit status, and that may require mitigation.

Wetland Mitigation:

Note: Only enhanced, restored, created or preserved wetlands are acceptable as mitigation for wetlands alterations. Restored, enhanced, created, or preserved ponds are not acceptable as mitigation for wetland alterations.

- The mitigation acreage ratio must conform to the requirements in Rule 1200-4-7-.04(7b).
- Describe where the mitigation is proposed.
- Label the mitigation site and the impact site on a USGS quadrangle.
- Develop a scaled plan (preferably with 6-inch contours) and sections to illustrate the size, shape, and depth variation of the proposed mitigation.
- Describe the source of hydrology and demonstrate that there will be sufficient water to sustain the wetland mitigation in perpetuity.
- Describe the soil type in the mitigation area and if soil amendments will be necessary.
- Describe how and what vegetation will be established.
- Describe when the mitigation will be constructed and completed. The rules require wetland mitigation be performed before or simultaneously to the wetland impact (depending on category of mitigation and practicability).
- Describe Best Management Practices to be used. This may include, but is not limited to, erosion control and low-impact equipment in existing wetland areas.
- Describe how the mitigation will be monitored, who will be conducting the monitoring, and the qualifications of the person/company selected to conduct the monitoring. Monitoring must be conducted for at least 5 years.
- Describe how water quality functions will be replaced with the proposed mitigation.
- Identify who will manage the mitigation area, who will retain ownership, and how the mitigation area will be protected in perpetuity.

- Describe a contingency plan in case the mitigation fails, including a time frame for implementation.

Stream, Lake, Pond Mitigation:

- The mitigation must conform to the framework set up in rule 1200-4-7-.04 (7a). Additional guidance for stream mitigation is available in the Stream Mitigation Guidelines for the State of Tennessee. The guidelines are available on the Internet at http://www.state.tn.us/environment/wpc/publications/StreamMitigationGuidelines.pdf.
- Describe where the mitigation is proposed.
- Label the mitigation site and the impact site on a USGS quadrangle.
- Develop a plan showing the size, shape, and depth of the proposed mitigation areas. This should include cross sections.
- Describe habitat restoration or enhancement proposed. Demonstrate that there will be no elimination or substantial impairment of existing in-stream water uses as part of the proposed mitigation.
- Describe Best Management Practices to be used. This may include, but is not limited to, velocity reduction structures, erosion control methods, and construction staging.
- Develop a monitoring plan that will focus on the re-establishment of habitat and other water quality functions. Identify who will be conducting the monitoring and the qualifications of the person/company selected to conduct the monitoring. Monitoring must be conducted for at least 5 years.
- Describe how water quality functions will be replaced with the proposed mitigation.
- Identify who will manage the mitigation area, who will retain ownership, and how the mitigation area will be protected in perpetuity.
- Describe a contingency plan in case the mitigation fails, including a time frame for implementation.

11.2 If you believe mitigation is not required, state the reason or cite the regulation to support this position.

- If your reason is based on “no lost resource value”, then it is your responsibility to support that claim with justification, data, case history or other evidence.
- If a permit qualifies for coverage under an existing general permit, then please state that as the reason for not providing compensatory mitigation.

11.3 A detailed discussion of why you believe the mitigation would result in no net loss of resource value.

- Rule 1200-4-7-.04 states: "No activity may be authorized by the Commissioner unless any lost resource value associated with the proposed impact is offset by mitigation sufficient to result in no overall net loss." It is the responsibility of the applicant to provide evidence of the resource value of both the impacted stream and the proposed mitigation to demonstrate "no net loss in resource value."

Section 12: Technical Information

12.1 Detailed plans, blueprints, or legible sketches of present site conditions and the proposed activity. Plans must be 8.5 x 11 inches. Additional larger plans may also be submitted to aid in application review. The detailed plans need to include dimensions of the existing and proposed stream or wetland such as depth, length, average width, substrate and riparian vegetation.

- Many of these items were described in Section 8, but these should be enhanced with physical plans and illustrations.
- Many projects do not necessarily require detailed engineering plans. In that case, submit drawings or sketches that accurately depict the proposed structure or activity to scale. Please include all dimensions. These plans must be of sufficient detail to accurately describe the project, aquatic resource alterations, and any proposed compensatory mitigation.
- When the division prepares its public notice, all materials must be converted to fit 8.5 x 11-inch paper. Therefore, you should prepare a version of your plans to scale on 8.5 x 11 sizes. More complicated projects may be split on separate sheets to avoid overcrowding.
- If your project involves a large-scale impact or several separate impacts in a larger development, full-size plans will aid in the technical review of your proposal. However, the 8.5 x 11 version is still required.
- If your project involves dredging or filling, provide the number of cubic yards and type of material proposed to be removed from or placed in the stream or wetland.

12.2 If mitigation is proposed, submit detailed plans, blueprints, or legible sketches of the proposed mitigation

- These plans should be a part of the overall mitigation plan as described in Section 11, but submitted as part of the application in a format that could be used by contractors or other technical personnel on the project site. These figures may also be used in the public notice for your project.

- When the division prepares its public notice, all materials must be converted to fit 8.5 x 11-inch paper. Therefore, you must prepare a version of your plans (to scale) on 8.5 x 11 sizes. More complicated projects may be split on separate sheets to avoid overcrowding.

12.3 For both the proposed activity and mitigation, provide a discussion regarding the sequencing of events

- Provide descriptions of all implementation steps. This discussion is key to understanding the feasibility of constructing the proposed alterations. Also, it reflects the likelihood of the project conforming to the requirements in rule 1200-4-7 concerning resource loss and timeliness of mitigation completion.

12.4 Location and type of erosion prevention and sediment control measures for the proposed alterations

- Give a description, using diagrams where necessary, of the type of erosion prevention and the type or kind of sediment controls that would be used in direct association with the stream or wetland alteration. The overall site storm water pollution prevention plan (SWPPP) is not needed for this application; only the erosion prevention and sediment controls directly associated with the activity for which a permit is required is necessary. Note: The SWPPP is needed when submitting coverage under the TNCGP.

- Describe, using diagrams where necessary, any other type of pollution controls that you plan or are required to use on the project. These include, temporary check dams, pump around, diversion channels, cofferdams, etc.

12.5 A discussion of how the proposed activity will be performed (construction methods)

- Description of methods of excavation, grading or fill, and the materials to be excavated or placed.

- Description of any specific equipment or techniques that will be utilized for the resource alteration or mitigation.

12.6 A copy of all hydrologic or jurisdictional determination documents issued for the water resources on the project site.

- This would include any hydrologic determinations from TDEC, jurisdictional determination forms from the Corps of Engineers, or other government or resource agency determination on your site.

- If no documentation is available, but a determination has been performed on your site, provide the name of the agency and the contact person (if known), and approximate date.

Section 13: Certification and Signature

- "Printed Name" blank: your name must be typed or printed legibly.
- If the applicant (from section 1) is an agency, company, or other organization, then the official title of the signatory is required.
- Original signatures are preferred, however electronically submitted applications are acceptable.

Section 14: Where do I send my application?

- If you believe your application qualifies for general permit coverage, then send your completed, signed application directly to the EFO responsible for the county in which your activity will occur. The address, phone numbers and county coverage list for each EFO is located on the application form.
- If your application is for an individual permit (and not associated with mineral extraction), send your completed, signed application directly to the Natural Resources Section of the Division of Water Pollution Control at the address shown. A copy of your application should also be sent to the appropriate EFO. Print "EFO copy" on the top of that application copy.
- If your ARAP is associated with mineral extraction, please contact the Knoxville Environmental Field Office and ask to speak with either Mining or Oil and Gas.
- If you are unsure about what type of permit application (general or individual) your project may require, contact your local EFO, call toll-free 1-888-891-TDEC (8332) or e-mail arap.program@state.tn.us.

STATUTORY AND REGULATORY AUTHORITY FOR PROCESS

Tennessee Statutory Authority http://tennessee.gov/environment/permits/tcalink.shtml
- T.C.A. Section 69-3-108
- T.C.A. Section 68-203-101

Tennessee Regulatory Authority http://www.state.tn.us/sos/rules/1200/1200.htm
- Chapter 1200-4-1
- Chapter 1200-4-3
- Chapter 1200-4-7
- Chapter 1200-4-11

Federal Statutory Authority
- 33 USC 1341

Federal Regulatory Authority
- 33 CFR, Parts 320 through 330
- 40 CFR, Part 121

Appendix B

Alteration Specific Guidance

These documents contain additional information for applicants proposing certain types of alterations. This information is intended to supplement the "Guide for ARAP Permit Applicants."

Culverts, bridges, or pipes

Dam construction/ stream impoundment

Dredging

Intake or outfall structures

Stream relocations

Utility line crossings of streams and wetlands

Water withdrawals

Wetlands fill

Culverts, bridges or pipes

All culverting, bridging or piping of surface waters requires an ARAP.

Often, culverts, bridges or pipes associated with road crossings can be authorized under the *General Permit for Construction and Removal of Minor Road Crossings*. If the culverting, bridging or piping of a stream is proposed for any purpose other than what is necessary for a linear transportation project (*e.g.* road crossings or pedestrian crossing), it will require the submittal of an individual permit application to the Natural Resources Section for review. Any application for culverting, bridging, or piping may be reviewed by the local field office and be determined to need processing as an individual permit. Refer to the exclusions section on the general permit for the most common reasons an individual permit would be required.Use the following link to view the *General Permit for Construction and Removal of Minor Road Crossings*.
http://www.state.tn.us/environment/wpc/ARAPgp/MinorRoadCrossings.pdf .

Submittal guidance:

In addition to all the basic information required on the permit application form and information in the "Guide for ARAP Permit Applicants," be sure to provide the following:

1) Figure(s) showing a plan view of the culvert, bridge or pipe including the transitions (*e.g.* channel re-alignment, channel widening, ripraped lined channels, etc.).
2) If there are multiple culverts, bridges or pipes in the same project, provide a plan view figure that shows the location of each impact.
3) Figure showing the cross section of the existing stream and the proposed cross section.
4) Figure showing any specifications required to construct the culvert, bridge or pipe.
5) Plan for separating the installation from the flowing water.
6) Alternatives section:
    - Describe alternatives in alignment, including minimizing the length of the culvert, bridge, or pipe and reducing the number of total crossings.
    - Describe alternative structures, such as bottomless structures and span bridges.

Specific issues with culverting, bridging or piping:

Before you submit an application for cuvlerting, bridging or piping surface waters, consider the following issues.

- **Over widening**: Stream channels are not to be over widened to accommodate the structure unless a compelling reason can be supported. If a large structure width is required due to flood conditions, a low-flow channel and flood-plain benches on both sides that can accommodate the floodwaters is recommended. When a multi-

barrel culvert or box bridge is being used, it is recommended that the stream be diverted into one of the barrels and the others be used for flood conditions.

- **Pier placement**: When designing a structure that requires piers, the piers are to be placed out of the stream channel or wetland to the extent possible.
- **Scour protection**: The use of scour protection must be limited to the minimum necessary to protect the integrity of the stream and structure. If riprap is being used, it must be placed in such a manner as to not impede the movement of aquatic life and the stream's flow.
- **Alignment**: A structure must be aligned as close as possible with the stream in such a manner as to prevent long transitions at inlets and outlets.
- **Bottomless culverts**: When appropriate (*e.g.*, rock bottom streams), bottomless culverts are recommended. When a bottom is required in a culvert, the culvert should be constructed below stream grade in a manner that allows natural substrate to reestablish. If a culvert requires a bottom, please submit the reason behind the design.

Dam construction / stream impoundment

The construction of dams on streams in Tennessee requires an individual ARAP. The basic purpose of a dam, which is to impound flow, has permanent and often severe impact to downstream waters. The impounded water becomes stagnant. Headwater dams, because of the lack of watershed recharge necessary to keep them filled and overflowing, interrupt the normal stream flow downstream.

Many applications to dam up streams will be denied. Only where the application can demonstrate a substantial need, such as a public water supply, or can show that it will have insignificant consequence may a permit be approved. It is an applicant's responsibility to show that a particular proposed impoundment would not cause water quality violations or result in a loss of resource value.

Where a permit is issued, habitat mitigation may be required. This is because of the change in habitat from a flowing stream to ponded area.

Submittal Guidelines:

In addition to all the basic information required on the permit application form and information in the "Guide for ARAP Permit Applicants," be sure to provide the following:

1) Figure(s) showing a plan view of the dam location and the surface area footprint of the proposed impoundment.
2) Describe the dimensions of the proposed impoundment (surface area and depth) as well at the total linear footage of the existing stream that will be impounded.
3) Figure showing design of the dam
4) Figure showing design of the outlet (*i.e.* surface spillway, standpipe, valve, etc.) and description of how it will maintain a flow pattern equal to the pre-impoundment flow.
5) Describe the type of material that will be used to construct dam and source of the material.
6) A report documenting the stream flow for one calendar year or equivalent scientific method for obtaining flow data.
7) All technical information necessary to show how the proposed impoundment will not result in diminished water quality or quantity downstream of the site.
8) Alternatives section:
    - Describe alternative locations for your proposed pond or lake, including locations not on a stream or spring.
    - Describe alternatives to achieving your project purpose that do not involve impounding the stream. For example, if you propose an impoundment for cattle watering, describe the alternatives to get water to the cattle.
    - Describe alternative designs (including dam or outlet designs).

Specific issues with dam constructions/stream impoundment:

Before you submit an application for the construction of an impoundment, consider the following issues.

- **Downstream water quality**: The use support of the stream below the impoundment must not be polluted. The water quality problems most commonly associated with impoundment tail waters include elevated water temperatures, decreased dissolved oxygen, elevated metals (manganese and iron), elevated nutrients, sedimentation and changes in habitat. It is an applicant's responsibility to show that a particular proposed impoundment would not cause water quality violations or result in a loss of resource value.
- **Downstream water quantity**: The use support of the waters downstream of the impoundment must be maintained. This means there must still be a similar amount of stream flow available for downstream uses of the stream. The uses for streams designated under law include, livestock watering and wildlife, fish and aquatic life; recreation and irrigation. Some streams are also classified for use as domestic or industrial water supplies. Lack of adequate flow was a major issue identified during the TDEC impounded stream study[1]. It is an applicant's responsibility to show that a particular proposed impoundment would not cause water quality violations or result in a loss of resource value.
- **Mitigation**: If a proposed impoundment can maintain downstream water quality and quantity, the impact will still require compensatory mitigation for the habitat impact within the impounded zone. You can refer to the Tennessee Stream Mitigation Guidelines for an idea of the amount and type of mitigation that would be required. http://tennessee.gov/environment/wpc/publications/StreamMitigationGuidelines.pdf
- **Antidegradation**: Since impounding surface waters degrades certain water quality parameters such as oxygen and temperature, adds nutrients such as nitrogen and phosphorus, and results in a conversion of habitat and a shift in the ecosystem from a flowing water system to ponded system, the Natural Resources Section will determine this impact is a degrading activity. This will require the department to assess the antidegradation status of the affected stream (if not previously determined). This can introduce a significant delay in processing the permit application.
- **Jurisdictional issues and long-term maintenance**: If you have an existing impoundment, or are proposing creating an impoundment, remember that it will still be waters of the state once impounded. That means alterations to the impoundment (dredging, maintenance) would require an ARAP permit

[1] **http://www.state.tn.us/environment/wpc/publications/isp_report.pdf**

Dredging

All dredging of surface waters requires an ARAP.

Relatively small volumes of dredging or filling within reservoirs or impoundments can be covered by an authorization issued under the *General Permit for Minor Dredging and Filling.* Some instances of dredging accumulated sediments from around existing structures within any type of surface waters can be covered by an authorization under the *General Permit for Maintenance Activities*. If the dredging activity exceeds the volume limits or length boundaries set up in the general permits, it will require an individual permit application from the Natural Resources Section. Refer to the exclusions section on the general permit for the most common reasons an individual permit would be required. Use the following links to view the *General Permit for Minor Dredging and Filling* or *Maintenance*.

http://www.state.tn.us/environment/wpc/ARAPgp/MinorDredgingFilling.pdf
http://www.state.tn.us/environment/wpc/ARAPgp/Maintenance.pdf

Submittal guidance:

In addition to all the basic information required on the permit application form and information in the "Guide for ARAP Permit Applicants," be sure to provide the following:

1) Information on the existing depth of the lake or stream in the project area.
2) A plan view showing the location and boundaries of the proposed dredging.
3) Characterization of the sediment proposed for disturbance. The physical and chemical properties of the sediment need to be characterized. For detailed information on how to characterize the sediment please visit the U.S. Corps of Engineers' Dredging Operations Technical Support (DOTS) Program website at http://el.erdc.usace.army.mil/dots/dots.html.
4) Through historical research and close examination of the watershed, an applicant could rule out the need for sampling. However, that argument needs to be defensible and demonstrate that there is no reason to believe contaminated sediments are present in the area of concern. Document your reasoning. One source of information on possible contaminated sediments is the current TDEC 303d list.
5) If sampling is deemed necessary, a sampling plan needs to be generated that would accurately characterize the area of dredging. It is recommended that the division review the sampling plan prior to sampling. However, if you wish to proceed with sampling without division review, you are running the risk of additional information or sampling being required after sampling has been completed. Even if you get division review, you may still be required to provide additional information in order to defend that data. Document your reasoning.
6) Identify the disposal area and containment measures. The disposal area must be identified on a topographic map. If the dredged material is to be disposed of at an upland site, describe how the material and/or muddy water would be prevented from leaving the disposal site and entering surface waters.

7) Describe the dredging and disposal technique. Provide a description of the proposed dredging equipment. Also, describe how the dredged material would be transported to the disposal site.
8) Plan for preventing sediment discharge downstream or within the lake during the dredging activity.
9) A dredging activity cannot violate water quality standards set by the division. Some contaminants have the potential to be loosened from the sediment during dredging and enter the water column. A detailed discussion on whether or not a dredging activity will violate water quality standards needs to be submitted.
10) Alternatives section:
    - Discuss alternatives in dredging amounts (surface area and depth).
    - Discuss alternative dredging techniques.
    - Discuss alternative disposal sites.

Specific issues with dredging applications:

Before you submit an application for dredging in waters of the state, consider the following issues.

- Make sure you have done all appropriate background research on what type of sediment you are requesting to dredge. Potential sediment contamination issues are the largest delay to processing a dredging application.
- Identification of the appropriate disposal site. An applicant must keep in mind both the quality and quantity of dredge material they must deal with. If your sediments are contaminated, you will need to coordinate with TDEC's Division of Solid Waste for approvals on disposal.
- Make sure you have minimized the amount of dredging necessary. Dredging often impacts the quality of shallow water habitat available for aquatic life. If the activity results in a loss of shallow water habitat, it may be necessary to provide mitigative measures within the same waterbody.

Intake or outfall structures

All structures that are installed by cutting into the stream, wetland or lake require an ARAP.

Usually the installation, repair or maintenance of these structures can covered by an authorization issued under the *General Permit for Construction of Intake and Outfall Structures*.

The general ARAP permit cannot be used to authorize the substance being discharged from the structure, or the withdrawal of water. If there are other ARAP activities taking place within the same project, the division may require an individual permit due to cumulative impacts. Refer to the exclusions section on the general permit for the most common reasons an individual permit would be required. Use the following link to view the *General Permit for Construction of Intake and Outfall Structures:*

http://www.state.tn.us/environment/wpc/ARAPgp/IntakeOutfallStructures.pdf.

Submittal guidelines:

In addition to all the basic information required on the permit application form and information in the "Guide for ARAP Permit Applicants," be sure to provide the following:

1) Figure(s) showing a plan view of the structure location.
2) If there are multiple intake/outfall structures in the same project, provide a plan view figure that shows the locations of all outfalls.
3) Figure showing the design of the structure.
4) Figure showing the height of the structure compared to the stream bottom.
5) Plan for separating the construction activity from the structure installation from the flowing water.
6) Alternatives section:
    - Describe alternatives in outfall placement or reduction in the number of outfalls.
    - Describe alternative types of structures that could meet your project purpose.

Specific issues with outfalls:

Before you submit an application for the installation of an outfall in an aquatic resource, consider the following issues.

- **Permit for the discharge or the withdrawal**: The effluent from an outfall must be authorized, exempted or in compliance with the National Pollution Discharge Elimination System (NPDES) program. The withdrawal of water by an intake must be authorized, exempted or in compliance with the Tennessee Water Quality Control Act. Refer to the guidance for water withdrawal section within this document.
- **Alignment**: An outfall must be installed and aligned to avoid permanent damage to the integrity of the stream channel, including the opposite bank. The structure should also be designed to not interfere with the base flow of a stream or block hydrology from a wetland.

Stream relocations

All stream relocations require an individual ARAP.

The relocation of a stream should only be considered when avoidance, minimization and all practical alternatives have been exhausted. A complete stream relocation application should be accompanied by specific plans and technical information. Where it is necessary (necessity demonstrated by applicant) to relocate a stream channel, the stream relocation design must restore both biological and hydraulic functions of a natural stream.

If the purpose of your project is to restore "natural" characteristics of a stream channel to a currently altered or degraded channel, it is possible that your proposal could be authorized under the *General Permit for Stream Restoration and Habitat Enhancement.* Use the following link to view the general permit: http://www.state.tn.us/environment/wpc/ARAPgp/StreamRestoration.pdf.

Submittal guidelines:

In addition to all the basic information required on the permit application form and information in the "Guide for ARAP Permit Applicants," be sure to provide the following:

1) Figure(s) showing a plan view of the existing stream location and the proposed stream location.
2) Figures showing cross-sections of the existing stream and the proposed stream (at least one cross section for every 200 feet of stream proposed for alteration; more if stream dimensions vary more frequently).
3) Photographs of the existing stream, above the reach to be relocated, along the reach to be relocated and below the reach to be relocated.
4) Figures showing the longitudinal profile of the existing and proposed streams.
5) Habitat assessments of the existing stream.
6) Plan for separating the construction from the flowing water.
7) Figures depicting the proposed in-stream habitat and the proposed riparian planting plan.
8) All technical information necessary to show how the proposed stream will be a similar resource in structure and function (including habitat) to the existing stream.
9) Monitoring plans
10) Alternatives section:
    - Discuss alternative sites for the project
    - Discuss alternative site layouts.
    - The financial costs of relocating a stream include the technical oversight of the construction and the long-term monitoring costs.

Specific Issues with stream relocation applications:

Before you submit an application to relocated a stream, consider the following issues.

- **Avoidance and minimization:** As with all ARAP applications, a discussion of avoidance and minimization is required. It is crucial to document your pre-application considerations of these issues.
- **Over widening**: Relocated stream channels are not to be over widened to accommodate flood flows. If a channel is over-widened, it should have a similar base-flow channel size and have mitigation to compensate for the over-widened channel.
- **Channel design**: Stream relocation design plans often include only capture of stream flow, conveyance through a constructed channel, and discharge into to original channel. This is not adequate design information to obtain an ARAP permit. The maintenance of flow and hydrologic sources are essential to stream dynamics, one must also consider existing stream hydrology and channel design (fluvial geomorphic design, FGM). A simple trapezoidal channel to capture stream flow is not sufficient to assure a functioning stream with the same value as the existing stream.
    - **Hydrology**: A geotechnical investigation of the area surrounding the existing stream must be conducted to determine the hydrology that provides water for the stream. A similar study must also be conducted to determine a location that will provide a similar hydrology. The extent that identified ground water provides water to the stream and elevation of confining layers are also important considerations. The applicant must demonstrate that hydrology will exist in the new channel location to provide flow similar to the existing channel. Data and information collected during geotechnical studies must be presented with application. Flow studies must be conducted prior to construction to determine flow characteristics. Flow studies are to be conducted upstream and downstream of the proposed relocation.
    - **Fluvial Geomorphology**: The stream design must in accordance with accepted geomorphologic design principles. Long-term stability of the new stream channel can be more assured by adherence with FGM principles. However, short-term stability (new stream bed will not erode) must also be demonstrated by the applicant. Non-biodegradable materials are not allowed in stream channels to prevent erosion.
- **Vegetation:** A crucial, and often expensive, aspect of relocating a stream is creating a new vegetative buffer (riparian zone) around the stream. Plantings should incorporate vegetation indigenous to the area including high and low canopy trees and herbaceous vegetation. Trees and shrubs must be planted in close enough proximity to the stream channel to serve as stream canopy. Any permit granted will require a minimum of 75% tree survival.

- **Antidegradation**: Since the relocation of a stream will at a minimum result in a temporal loss of resource value due to time required for habitat establishment and canopy recovery, applicants should assume a regulatory determination of degradation. This will require the department to assess the antidegradation status of the affected stream (if not previously determined). This can introduce a significant delay in processing the permit application.
- **Monitoring**: If a stream relocation is permitted, monitoring and reporting will be required by permit condition. Applicants must propose monitoring programs to assess success of relocations. Monitoring programs must include duration, frequency and elements of assessments. Typical elements include, but are not limited to, aerial coverage for riparian zones, preconstruction habitat assessments, habitat assessments during the monitoring periods, stream and bank stability, vegetation survival and flow characteristics (to be compared with pre-project measurements).

Mitigation: Stream relocations often result in loss of resource value. Examples include: loss of stream length channel cross-section enlargements beyond the reference condition for the purpose of conveying flood flows, and loss of riparian canopy that cannot be replaced In addition, since stream habitat and riparian canopy is not fully developed at inception of the new stream channel, compensatory mitigation may be required to offset a temporal loss of resource value. Refer to the Tennessee Stream Mitigation Guidelines for a general idea of the amount and type of mitigation that would be required. http://tennessee.gov/environment/wpc/publications/StreamMitigationGuidelines.pdf.

Utility line crossings of streams and wetlands

All utility line crossings of surface waters require an ARAP.

Often, utility line crossings can be covered by an authorization issued under the *General Permit for Utility Line Crossings*. Multiple crossings of the same stream by gravity sewer require an individual permit from the Natural Resources Section. Any application for utility line crossings may be reviewed by the local field office and be determined to need an individual permit. Refer to the exclusions section on the general permit for the most common reasons an individual permit would be required. Use the following link to view the *General Permit for Utility Line Crossings.*
http://www.state.tn.us/environment/wpc/ARAPgp/UtilityLine.pdf.

Submittal guidelines:

In addition to all the basic information required on the permit application form and information in the "Guide for ARAP Permit Applicants," be sure to provide the following:

1) Figure(s) showing a plan view of the utility line alignment and the water resources. Make sure all crossing points are evident.
2) A table with the specifics for each crossing point. For each crossing point provide the latitude and longitude, pipe size and installation method and any site-specific stream/wetland description.
3) A figure showing the typical crossing detail specifications.
4) Plan for separating the utility line installation from the flowing water.
5) Type of geologic formation the line will be excavated through.
6) Alternatives section:
    - Describe alternatives in alignment, including minimizing the number of water crossings, alternatives to paralleling the stream and (if the line is parallel to the stream) increasing the distance from the top of bank.
    - Describe alternatives to construction: discuss installation techniques (such as open cut and directional boring) and excavation methods when rock is encountered (such as hoe ramming, rock trenching or blasting).

Specific issues with gravity sewer lines:

Gravity sewer lines create a potential conduit to intercept and capture flow from the streams and wetlands.

In streams:

- A plan to avoid intercepting ground water headed toward the stream.
  Locate the parallel line as far as possible from the stream channel. Describe in the application the average distance from top of bank and the minimum distance from top of bank. Other techniques to lessen the likelihood of flow capture include not blasting close to the stream (including the stream crossing locations) and the use of a trench sealer, such as flowable fill, in areas where a confining layer is broken by the trench.
- A plan to avoid capturing the base flow water from the stream channel.

This could include not blasting the stream crossing locations and approaches to them and the use of a trench sealer, such as flowable fill, in areas where a confining layer is broken by the trench. Other crossing techniques that would not interrupt the streambed confining layer, such as directional boring, could be used.

In wetlands:

- A plan to avoid equipment impact to wetlands during construction.
- This should include techniques such as work and storage areas outside of wetland, timber matting or its equivalent for work within wetlands, hand equipment or rubber tired equipment for larger jobs, flagging of adjacent wetlands not proposed for impact.
- A restoration plan of the utility line corridor to avoid permanent impacts.
- This plan should include things such as impervious trench collars at the up and down slope end of the wetland areas to prevent draining the wetland; stockpiling and returning sub-soils and top soils to pre-project contours; and a vegetation plan to temporarily stabilize the site that doesn't include invasive species (such as fescue).
- Mitigation plan. In some instances utility line corridors through wetlands will require wetland mitigation.

Water withdrawals

All new water withdrawals (not specifically exempt under rule 1200-4-7-.02) that will or will likely alter the properties of the source stream or surface water require an individual ARAP permit. Any withdrawal that existed prior to July 25, 2000, and does not adversely alter or affect the classified uses of the source stream is exempt from these permitting requirements until there is a proposed change in the rate or volume of pumping.

Even if the withdrawal does not need a permit, the installation of any new intake structure may require authorization under the *General Permit for the Construction of Intake and Outfall Structures.* Use the following link to view the general permit.
http://www.state.tn.us/environment/wpc/ARAPgp/IntakeOutfallStructures.pdf

To determine if a new withdrawal or change in an existing withdrawal would require an ARAP, the following minimum information must be submitted:

1)Signed ARAP application form (CN 1091)
2)Proposed withdrawal rates (instantaneous and total) and volumes
3)Proposed withdrawal schedule
4)Flow data of the source stream (if free flowing). The method or source for obtaining the flow data should be noted.
5)Topographic map with the withdrawal point indicated
6)Cover letter indicating the purpose of the withdrawal and a request for the division's determination on whether a permit would be required.

All withdrawals, both those subject to ARAP permitting and those determined not to need an ARAP, may be subject to the Water Withdrawal Registration Act, http://www.state.tn.us/environment/dws/ and/or the Inter-Basin Water Transfer Act http://tennessee.gov/environment/permits/intbasin.shtml.

A water withdrawal subject to ARAP permitting should submit the following additional information:

1) All information and the fee required on the ARAP application form.
2) Pump capacity and design specifications
3) New withdrawals or pump upgrades should include the construction plan including sediment and erosion controls
4) Any information to show how the withdrawal plan would be protective of the stream's resource value. This would include how the withdrawal plan would be protective of the stream's low flows and maintain the natural flow fluctuations of the stream.
5) An alternatives analysis that discusses other sources of the needed water, storage considerations, and how this withdrawal will fulfill anticipated future water needs. If the application is for a renewal of an existing withdrawal permit (with no changes), it still requires an alternatives analysis.

Under the state's antidegradation rules, a withdrawal the represents less than 5% of the 7Q10 flow will be considered *de minimis.* Degradation determinations for withdrawals of greater percentages will be made on a source stream basis.

Since the permits are limited to five years in duration, any withdrawal desired to continue must submit a new application at least 90 days prior to the permit expiration.

Wetlands fills

All wetlands fill or impacts to wetlands require an ARAP.

The filling of wetlands should only be considered when avoidance, minimization and all practical alternatives have been exhausted. Small wetlands fills (less than 0.25 acre of isolated wetlands or 0.1 acre of low-functioning non-isolated wetlands) can qualify for coverage under the *General Permit for Minor Alterations to Wetlands*. If a wetland fill exceeds those acreage limits, or the wetland is a high resource value wetland, it will require an individual permit application from the Natural Resources Section. Cumulative impacts for wetland losses for a whole project must be considered when determining if general permit coverage is appropriate. Refer to the exclusions section on the general permit for the most common reasons an individual permit would be required. Use the following link to view the *General Permit for Minor Alterations to Wetlands*.
http://www.state.tn.us/environment/wpc/ARAPgp/MinorWetlands.pdf

Submittal guidance:

In addition to all the basic information required on the permit application form and information in the "Guide for ARAP Permit Applicants," be sure to provide the following:

1) Figure(s) showing the location of all wetland areas in the project, with the acreage of each wetland.
2) The wetland delineation information, including a map with the sample points and the delineation form for each point.
3) A thorough description of the type of wetland to be impacted (include the size, source of hydrology, and vegetation type).
4) All technical information necessary to show how the proposed wetland mitigation (if required) will result in no loss of resource value compared to the existing wetland.
5) Monitoring plans for mitigation areas (if required).
6) Alternatives section:
    - Discuss alternative sites for the project
    - Discuss alternative site layouts.
    - Be sure that the financial cost of wetlands mitigation includes the technical oversight of the construction and the long-term monitoring costs.

Specific issues with wetlands fill:

Before you submit an application to fill wetlands, please consider the following issues.

- **Avoidance and Minimization:** As with all ARAP applications, a discussion of avoidance and minimization is required. It is crucial to document your pre-application considerations of these issues.
- **Mitigation**: Most wetlands fill projects will require compensatory mitigation to offset the loss of the wetlands. The wetland mitigation proposed must conform to the basic principles and ratios set forth in 1200-4-7-.04 (7). One key regulation that must be factored in to your project planning is that some types of wetlands

mitigation must be conducted prior to the impact (before the wetland is filled) and other types must be conducted before or simultaneously to the impact. The design and execution of a wetland mitigation plan typically requires an expert in wetlands. The U.S. Army Corps of Engineers maintains a list of wetland consultants for both the Nashville District and Memphis District areas.

- **Mitigation types for wetlands:**
    - **Restoration** of degraded or impacted wetlands. Restoration is typically performed on "prior converted" areas.
    - **Creation** of wetlands in an area classified as uplands. This is the most difficult type of wetland mitigation to perform. Often the best creation sites are next to existing wetlands.
    - **Enhancement** of existing wetlands.
    - **Preservation** of existing wetlands.

    The U.S. Army Corps of Engineers will usually be involved in permitting a wetlands fill project on a federal level. They have a guidance letter available at http://www.usace.army.mil/cw/cecwo/reg/rgls/RGL2-02.pdf that has good information on wetlands mitigation. Appendix B of that document provides issues to consider when creating a wetlands mitigation plan.
- **Monitoring**: If a wetlands fill permit with a mitigation component is issued, monitoring and reporting will be required by permit condition and is required by rule. Applicants must propose monitoring programs to assess success of the mitigation. Monitoring programs must include duration, frequency, and elements of assessments. Typical elements include, but are not limited to, hydrology (source, amount and duration), soil characteristics, vegetation surveys and survival rates and wildlife use of the wetland.
- **Antidegradation**: Depending on the location and type of compensatory mitigation proposed and the size of the wetland impact, applicants should assume the Natural Resources Section might determine this impact is a degrading activity. This will require the department to assess the degradation status of the affected wetland system (if not previously determined). This can introduce a significant delay in processing the permit application.